

San Francisco Bay Area Toll Bridge Seismic Retrofit Program

2018 Third Quarter

Project Progress and Financial Update





**TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE**

Toll Bridge Program Oversight Committee
Department of Transportation
Office of the Director
1120 N Street
P.O. Box 942873
Sacramento, CA 94273-0001

November 14, 2018

Mr. Daniel Alvarez
Secretary of the Senate
State Capitol, Room 3044
Sacramento, CA 95814

Mr. E. Dotson Wilson
Chief Clerk of the Assembly
State Capitol, Room 3196
Sacramento, CA 95814

Dear Messrs. Alvarez and Wilson:

The Toll Bridge Program Oversight Committee (TBPOC) is pleased to submit the 2018 Third Quarter Project Progress and Financial Update, for the San Francisco Bay Area Toll Bridge Seismic Retrofit Program (TBSRP), prepared pursuant to California Streets and Highways Code Section 30952.

The TBPOC was established by Assembly Bill 144 in 2005 to oversee the delivery of the TBSRP and consists of the Executive Director of the Bay Area Toll Authority (BATA), the Director of the California Department of Transportation (Caltrans), and the Executive Director of the California Transportation Commission (CTC). With the opening of the new east span of the San Francisco-Oakland Bay Bridge (SFOBB) to traffic on September 2, 2013, all seven state-owned toll bridges in the Bay Area have now achieved seismic safety either via retrofit, or via replacement of existing structures.

In late September, Caltrans completed dismantling of all remaining portions of the old east span slated for removal. Three remaining marine foundations along Yerba Buena Island and the Oakland shoreline are being modified for public access. The new public access is being developed in partnership with the East Bay Regional Parks District and the Treasure Island Development Authority.

We also note the completion of the California State Auditor's audit of the seismic program released on August 28 2018. Their audit acknowledges the completion of the program within our budget and highlights TBPOC's oversight role as being successful at minimizing potential delays and controlling costs, including hundreds of millions of dollars in cost avoidance and savings. Now, with the Committee on the verge of concluding our oversight role, the new east span will complete its transition from a construction phase to an operations and maintenance phase under Caltrans and BATA oversight, like all other Bay Area State-owned toll bridges. The Committee plans on a final 2018 Fourth Quarter Project Progress and Financial Update to the Legislature and CTC to conclude the program. We intend to cease meeting after December 31, 2018.

November 14, 2018

Page 2 of 2

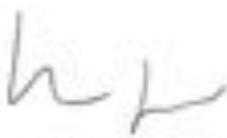
As of the third quarter of 2018, the program contingency is currently \$83.6 million in accordance with the current TBPOC approved budget of \$8.952 billion. As of the end of the third quarter of 2018, the 50 percent probable draw on program contingency is \$28.8 million, resulting in a forecast surplus of \$34.8 million to the current budget. Thus, the current program contingency balance should be sufficient to cover the cost of any remaining identified risks.

The TBPOC is committed to providing the Legislature and the CTC with comprehensive and timely reporting on the TBSRP. If there are any questions, or if any additional information is required, please do not hesitate to contact the members of the TBPOC.

Sincerely,



STEVE HEMINGER
TBPOC Chair
Executive Director
Bay Area Toll Authority



LAURIE BERMAN
Director
California Department of
Transportation



SUSAN BRANSEN
Executive Director
California Transportation Commission



Toll Bridge Program Oversight Committee
Department of Transportation
Office of the Director
1120 N Street
P.O. Box 942873
Sacramento, CA 94273-0001

November 14, 2018

Ms. Fran Inman, Chair
California Transportation Commission
1120 N Street, Room 2221
Sacramento, CA 95814

Mr. James Earp, Vice-Chair
California Transportation Commission
1120 N Street, Room 2221
Sacramento, CA 95814

Dear Ms. Inman and Mr. Earp:

The Toll Bridge Program Oversight Committee (TBPOC) is pleased to submit the 2018 Third Quarter Project Progress and Financial Update, for the San Francisco Bay Area Toll Bridge Seismic Retrofit Program (TBSRP), prepared pursuant to California Streets and Highways Code Section 30952.

The TBPOC was established by Assembly Bill 144 in 2005 to oversee the delivery of the TBSRP and consists of the Executive Director of the Bay Area Toll Authority (BATA), the Director of the California Department of Transportation (Caltrans), and the Executive Director of the California Transportation Commission (CTC). With the opening of the new east span of the San Francisco-Oakland Bay Bridge (SFOBB) to traffic on September 2, 2013, all seven state-owned toll bridges in the Bay Area have now achieved seismic safety either via retrofit, or via replacement of existing structures.

In late September, Caltrans completed dismantling of all remaining portions of the old east span slated for removal. Three remaining marine foundations along Yerba Buena Island and the Oakland shoreline are being modified for public access. The new public access is being developed in partnership with the East Bay Regional Parks District and the Treasure Island Development Authority.

We also note the completion of the California State Auditor's audit of the seismic program released on August 28 2018. Their audit acknowledges the completion of the program within our budget and highlights TBPOC's oversight role as being successful at minimizing potential delays and controlling costs, including hundreds of millions of dollars in cost avoidance and savings. Now, with the Committee on the verge of concluding our oversight role, the new east span will complete its transition from a construction phase to an operations and maintenance phase under Caltrans and BATA oversight, like all other Bay Area State-owned toll bridges. The Committee plans on a final 2018 Fourth Quarter Project Progress and Financial Update to the Legislature and CTC to conclude the program. We intend to cease meeting after December 31, 2018.

November 14, 2018

Page 2 of 2

As of the third quarter of 2018, the program contingency is currently \$63.6 million in accordance with the current TBPOC approved budget of \$8.952 billion. As of the end of the third quarter of 2018, the 50 percent probable draw on program contingency is \$28.8 million, resulting in a forecast surplus of \$34.8 million to the current budget. Thus, the current program contingency balance should be sufficient to cover the cost of any remaining identified risks.

The TBPOC is committed to providing the Legislature and the CTC with comprehensive and timely reporting on the TBSRP. If there are any questions, or if any additional information is required, please do not hesitate to contact the members of the TBPOC.

Sincerely,



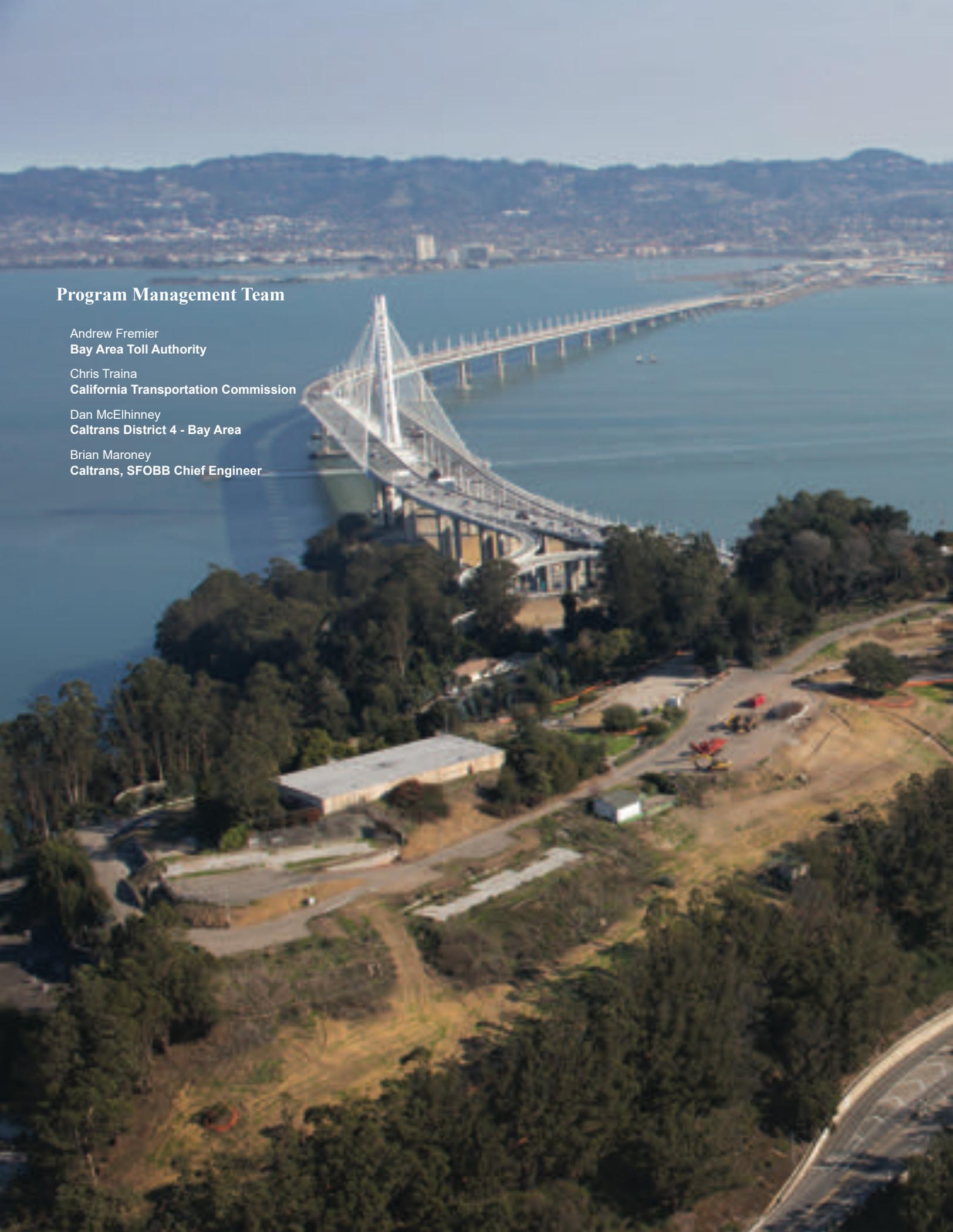
STEVE HEMINGER
TBPOC Chair
Executive Director
Bay Area Toll Authority



LAURIE BERMAN
Director
California Department of
Transportation



SUSAN BRANSEN
Executive Director
California Transportation Commission



Program Management Team

Andrew Fremier
Bay Area Toll Authority

Chris Traina
California Transportation Commission

Dan McElhinney
Caltrans District 4 - Bay Area

Brian Maroney
Caltrans, SFOBB Chief Engineer

CONTENTS

Introduction.....	1
Toll Bridge Seismic Retrofit Program Cost Summary.....	2
Toll Bridge Seismic Retrofit Program Schedule Summary.....	3
San Francisco-Oakland Bay Bridge Seismic Retrofit.....	4
Active Contracts:	
Yerba Buena Island Transition Structures #2.....	5
504'/288' Structures Dismantling.....	5
Marine Foundations.....	6
Marine Foundation Pier Retention and Public Access Facilities.....	7
Self-Anchored Suspension Bridge Superstructure	8
TBSRP Risk Management Program Update.....	9
Program Funding Status.....	12
Quarterly Environmental Compliance Highlights.....	14
Appendices.....	15

Cover:(Top) Pier E2 Pier Concrete Deck Pour, *Photo by Caltrans.*

Cover (Bottom) Concrete Girder Installation between E22 and E23 *Photo by Caltrans.*

Contents: SFOBB East Spans, looking east. *Photo by Caltrans.*

San Francisco Bay Area Toll Bridges

In July 2005, Assembly Bill (AB) 144 (Hancock) created the Toll Bridge Program Oversight Committee (TBPOC) to implement a project oversight and project control process for the new Benicia-Martinez Bridge and State Toll Bridge Seismic Retrofit Program (TBSRP) projects. The TBPOC consists of the Director of the California Department of Transportation (Caltrans), the Executive Director of the Bay Area Toll Authority (BATA) and the Executive Director of the California Transportation Commission (CTC). The TBPOC's project oversight and control processes include, but are not limited to, reviewing bid specifications and documents, reviewing and approving significant change orders and claims in excess of \$1 million (as defined by the TBPOC), and keeping the Legislature and others apprised of current project progress and status. In January 2010, Assembly Bill (AB) 1175 (Torlakson) amended the TBSRP to include the Antioch and Dumbarton Bridges seismic retrofit projects. The current TBSRP is as follows:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
Dumbarton Bridge Seismic Retrofit	Complete
Antioch Bridge Seismic Retrofit	Complete
San Francisco-Oakland Bay Bridge East Span Replacement	Complete
San Francisco-Oakland Bay Bridge West Approach Replacement	Complete
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
1958 Carquinez Bridge Seismic Retrofit	Complete
1962 Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

Toll Bridge Seismic Retrofit Program Cost Summary (Millions)

	Contract Status	AB 144/ SB 66/ AB 1175 Budget	TBPOC Approved Changes	Current TBPOC Approved Budget (Sept 2018)	Cost to Date (Sept 2018)	Current Cost Forecast (Sept 2018)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
SFOBB East Span Seismic Replacement								
Capital Outlay Construction								
Skyway	Completed	1,293.0	(56.9)	1,236.1	1,235.6	1,236.1	-	●
SAS Tower Anchor Rod Grouting	Completed	-		8.9	8.7	8.9	-	●
SAS Marine Foundations	Completed	313.5	(38.7)	274.8	274.8	274.8	-	●
SAS Superstructure	Completed	1,753.7	255.7	2,009.4	2,006.5	2,009.4	-	●
YBI Detour	Completed	131.9	341.4	473.3	473.4	473.4	0.1	●
YBI Transition Structures (YBITS)		299.3	15.4	314.7	310.6	314.8	0.1	●
YBITS 1	Completed		-	203.7	203.2	203.8	0.1	●
YBITS 2	Completed		-	107.8	107.4	107.8	-	●
Southgate Rd Interchange	By Others		-	3.2	0	3.2	-	●
Oakland Touchdown (OTD)		283.8	42.6	326.4	326.5	326.5	0.1	●
OTD 1	Completed		-	202.8	202.8	202.8	-	●
OTD 2	Completed		-	71.2	71.2	71.2	-	●
Detour	Completed		-	46.7	46.7	46.7	-	●
Submerged Electric Cable	Completed		-	5.7	5.7	5.7	-	●
Existing Bridge Dismantling		239.2	93.9	333.1	307.1	348.3	15.2	●
Cantilever Section	Completed		-	69.0	68.5	69.0	-	●
504/288 Sections	Completed		-	81.8	79.0	81.8	-	●
Marine Foundations			-	182.63	159.6	197.4	15.1	●
Pier-3 Demonstration Project	Completed		-	16.8	16.8	16.8	-	●
Remaining Marine Foundations	Construction		-	165.5	142.8	180.6	15.1	●
E4 to E18 Pier Demolition	Completed		-	109.7	109.8	109.7	-	●
E2, E19 to E22 Pier Retention	Construction		-	55.8	32.9	71.0	15.2	●
Stormwater Treatment Measures	Completed	15.0	1.9	16.9	16.9	16.9	-	●
Other Completed Projects	Completed	90.4	(0.5)	89.9	90.0	90.0	0.1	●
Capital Outlay Support		959.3	393.1	1,352.4	1,333.1	1,358.7	6.3	●
Right-of-Way and Envir. Mitigation		72.4	-	72.4	62.3	68.0	(4.4)	●
Other Budgeted Capital		35.1	(34.4)	0.7	0.7	0.7	-	●
Total SFOBB East Span Replacement		5,486.6	1,022.4	6,509.0	6,446.0	6,526.0	17.0	●
Antioch Bridge Seismic Retrofit								
Capital Outlay Support and Mitigation	Completed	-	24.1	24.1	24.1	24.2	0.1	●
Capital Outlay Construction		-	47.0	47.0	47.0	47.0	-	●
Total Antioch Bridge Seismic Retrofit		267.0	71.1	71.1	71.1	71.2	0.1	●
Dumbarton Bridge Seismic Retrofit								
Capital Outlay Support and Mitigation	Completed	-	47.5	47.5	47.4	47.5	-	●
Capital Outlay Construction		-	64.9	64.9	64.4	64.7	(0.3)	●
Total Dumbarton Bridge Seismic Retrofit		483.0	112.4	112.4	111.8	112.2	(0.3)	●
Program Completed Projects	Completed	2,268.4	(98.4)	2,170.0	2,169.6	2,169.9	(0.1)	●
Miscellaneous Program Costs		30.0	(4.0)	26.0	26.0	26.0	-	●
Net Programmatic Risks		-	-	-	-	11.9	11.9	●
Program Contingency*		900.0	(836.4)	63.6	-	-	-	●
Total Toll Bridge Seismic Retrofit Program*		9,435.0	(483.0)	8,952.0	8,824.8	8,917.2	(34.8)	●

Toll Bridge Seismic Retrofit Program Schedule Summary

	AB 144/SB 66 Project Completion Schedule Baseline (July 2005)	TBPOC Approved Changes (Months)	Current TBPOC Approved Completion Schedule (Sept 2018)	Current Completion Forecast (Sept 2018)	Schedule Variance (Months)	Schedule Status
	g	h	i=g+h	j	k=j-i	l
SFOBB East Span Seismic Replacement						
Contract Completion						
Skyway	Apr 2007	8	Dec 2007	Dec 2007	-	●
SAS Marine Foundations	Jun 2008	(5)	Jan 2008	Jan 2008	-	●
SAS Superstructure	Mar 2012	42	Sep 2015	Sep 2015	-	●
YBI Detour	Jul 2007	39	Oct 2010	Oct 2010	-	●
YBI Transition Structures (YBITS)	Nov 2013	36				
YBITS 1			Feb 2014	Feb 2014	-	●
YBITS 2			Nov 2017	Nov 2017	-	●
Oakland Touchdown	Nov 2013	10				
OTD 1			Jun 2010	Jun 2010	-	●
OTD 2			Sep 2015	Sep 2015	-	●
Submerged Electric Cable			Jan 2008	Jan 2008	-	●
Existing Bridge Dismantling	Sep 2014	54	Mar 2019	Sep 2018	(6)	●
Cantilever Section ⁽²⁾			Jul 2015	Jul 2015	-	●
504/288 Sections			Jun 2017	Jun 2017	-	●
Marine Foundations						
E3 Foundation Removal Demo Project			Jan 2016	Jan 2016	-	●
E4 - E18 Foundation Removal			Dec 2018	Dec 2018	-	●
E19 - E20 Foundation Removal			Dec 2018	Sep 2018	(3)	●
E2, E21 to E22 Pier Retention			Mar 2019	Aug 2019	5	●
Stormwater Treatment Measures			Mar 2008	Mar 2008	-	●
SFOBB East Span Bridge Opening and Other Milestones						
Westbound Seismic Safety Open	Sep 2011	24	Sep 2013	Sep 2013	-	●
Eastbound Seismic Safety Open	Sep 2012	12	Sep 2013	Sep 2013	-	●
Bike/Ped Path to YBI Landing			Dec 2015	Oct 2016	-	●
Eastbound On-Ramp			Jun 2016	Jun 2016	-	●

- Within approved schedule and budget
- Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated
- Known project impacts with forthcoming changes to approved schedules and budgets

Footnotes for Page 2 Toll Bridge Seismic Retrofit Program Cost Summary Table

*AB144/SB66 established a funding level of \$8.685 Billion in July 2005 for TBSRP. AB1175 added the retrofitting of the Antioch and Dumbarton Bridges in January 2010, providing another \$750 million in funding, bringing Total Toll Seismic Retrofit Program funding to \$9.435 Billion. Since 2010, \$483 million has been removed from the program, bringing the current TBPOC Approved Budget to \$8.952 Billion. The \$483 million removed consisted of:

Antioch Savings (4/12/10) \$137 million - Dumbarton Savings (9/02/10) \$216 million - Program Contingency Redirection (11/05/13) \$130 million, the current TBPOC approved Program Budget is \$8,952 million.

** (Due to the rounding of numbers, the totals above are show within \$0.1).

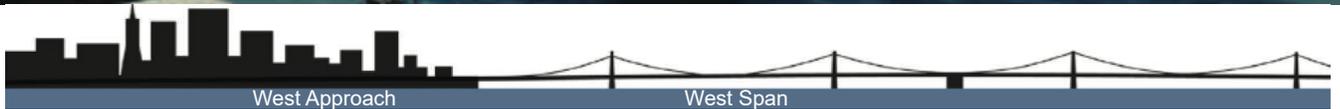
San Francisco-Oakland Bay Bridge East Span Replacement Project

Seismic Retrofit

Rather than a seismic retrofit, the two-mile long east span of the San Francisco-Oakland Bay Bridge has been completely rebuilt. The new east span consists of several different sections, yet appears as a single streamlined span. The eastbound and westbound lanes of the east span no longer include upper and lower decks. The lanes are side-by-side, providing motorists with expansive views of the bay. These views are also enjoyed by bicyclists and pedestrians, thanks to a new bicycle/pedestrian path on the south side of the bridge that will extend all the way to Yerba Buena Island. The new span features the world's longest Self-Anchored Suspension (SAS) bridge that connects to an elegant roadway supported by piers (Skyway), which gradually slopes down toward the Oakland shoreline (Oakland Touchdown).



SFOBB Self Anchor Suspension Span, looking west.
Photo courtesy of Caltrans.



San Francisco-Oakland Bay Bridge East Span Replacement Project

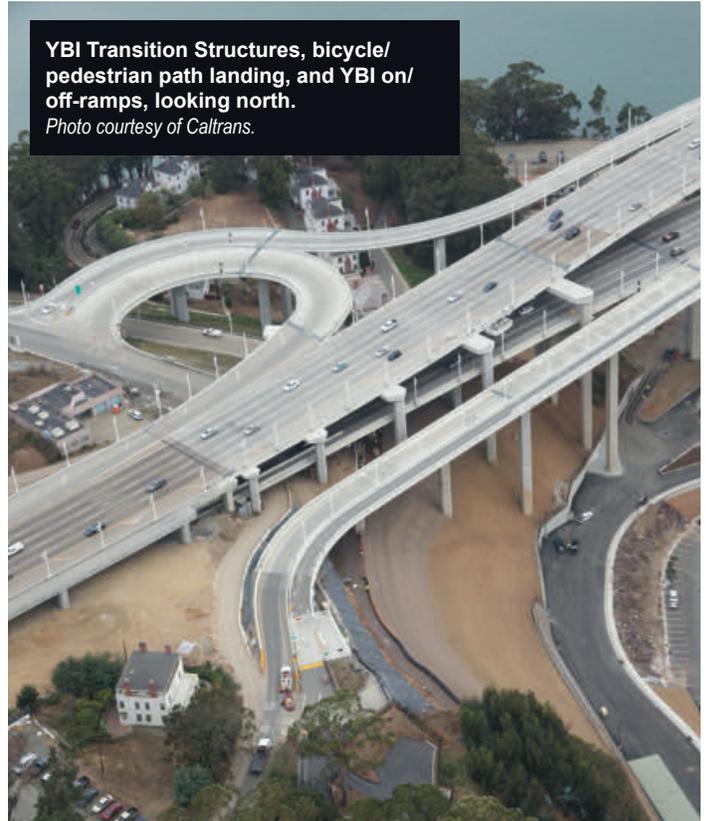
YBITS 2 - Eastbound On-Ramp and Cantilever Dismantling

Approved Capital Outlay Budget: \$107.8 M
 Contractor: CEC & Silverado, JV
 Status: 100% Complete as of September 2018

The YBITS 2 contract involves dismantling the detour viaduct, constructing a new eastbound on-ramp to the bridge, completing the bicycle/pedestrian path to Yerba Buena Island, and dismantling the cantilever.

The contract was awarded to California Engineering Contractors Inc./Silverado Contractors Inc., Joint Venture on November 28, 2012. Startup activities and submittals began in March 2013, with actual dismantling starting after the seismic safety opening during Labor Day weekend in 2013.

Status: Cantilever removal was completed in July 2015. The eastbound on-ramp was opened on June 2, 2016. The pedestrian/bicycle path opened in October 2016. Construction was complete on November 29, 2017.



504'/288' Superstructure Dismantling

Approved Capital Outlay Budget: \$81.8 M
 Contractor: CEC & Silverado JV
 Status: 100% Complete as of September 2018

The contractor sequenced the bridge removal operations into seven phases of dismantling beginning with the upper deck and initial truss removal, followed by the removal of the 504' and 288' steel truss spans, and ending with the removal of the supporting steel columns.

Status: The first of five 504' main truss spans was lowered in February 2016. The last 504' section was lowered in August 2016. The first of fourteen 288' sections was lowered in November 2016. The last section was lowered in March 2017. The project reached substantial completion in June 2017.

San Francisco-Oakland Bay Bridge East Span Replacement Project

Marine Foundation Demolition

Approved Capital Outlay Budget:

Pier E3 - \$16.8 M

Piers E4-E18 - \$109.7 M

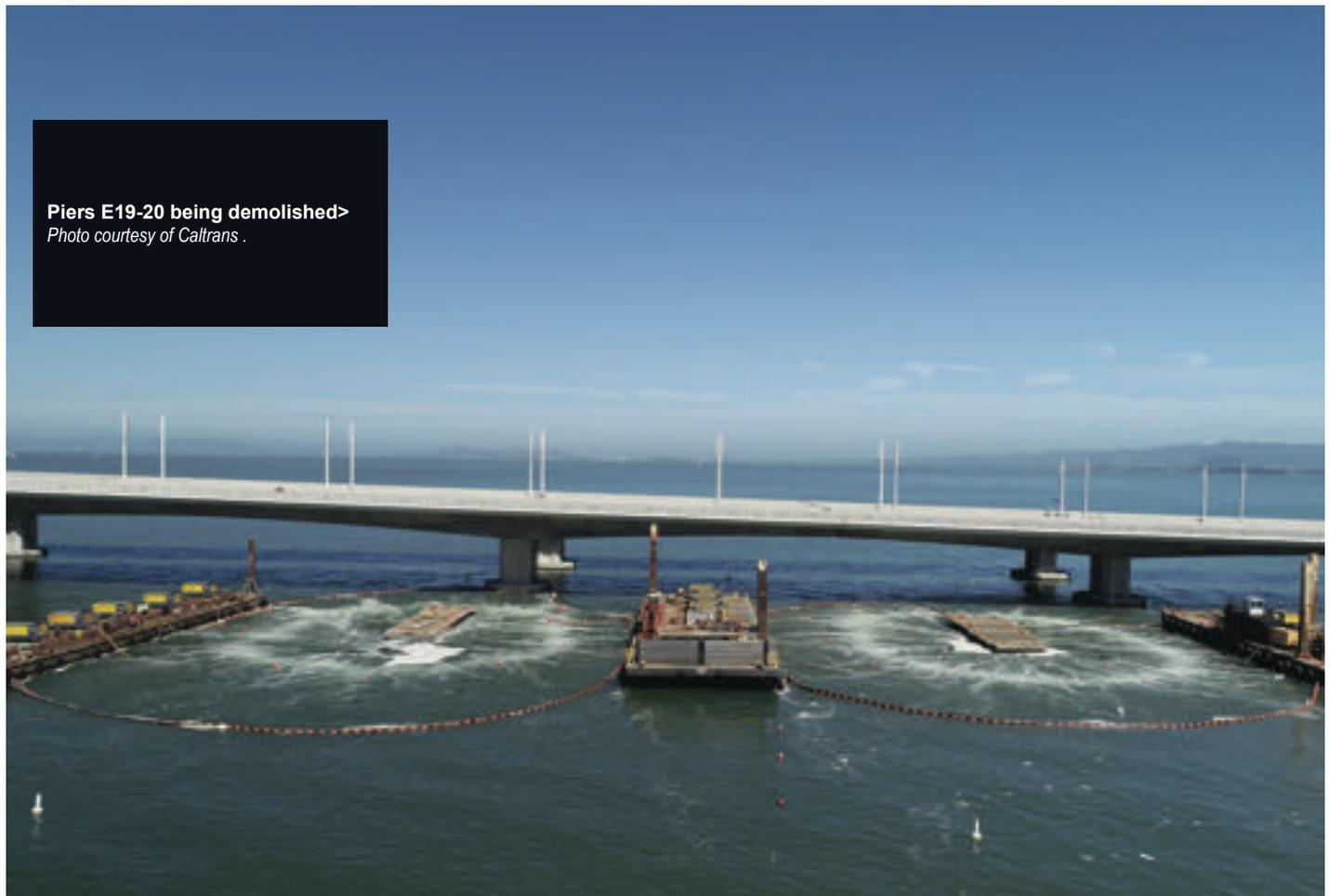
Contractor: Kiewit/Manson

Status: 100% Complete as of September 2018

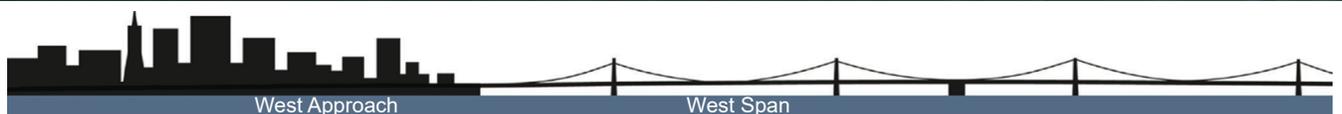
The original east span of the San Francisco-Oakland Bay Bridge was supported by 21 in-water bridge piers, Piers E2 through E22, along with land based piers at Yerba Buena Island and Oakland. Part of this project is the demolition of Pier E3, which is located 1,535 feet east of Yerba Buena Island and on the east side of a 50-foot deep navigation channel.

The marine foundation removal is a CMGC (Construction Manager / General Contractor) contract and the selected CMGC contractor is a Kiewit Manson team (KM).

Status: Thirteen marine foundations (E6 through E18) were imploded over six weekends, every other week, between September 2, 2017 and November 11, 2017.



Piers E19-20 being demolished>
Photo courtesy of Caltrans .



San Francisco-Oakland Bay Bridge East Span Replacement Project

Marine Foundation Demolition and Public Access Piers

Proposed Capital Outlay Budget: \$55.8 M

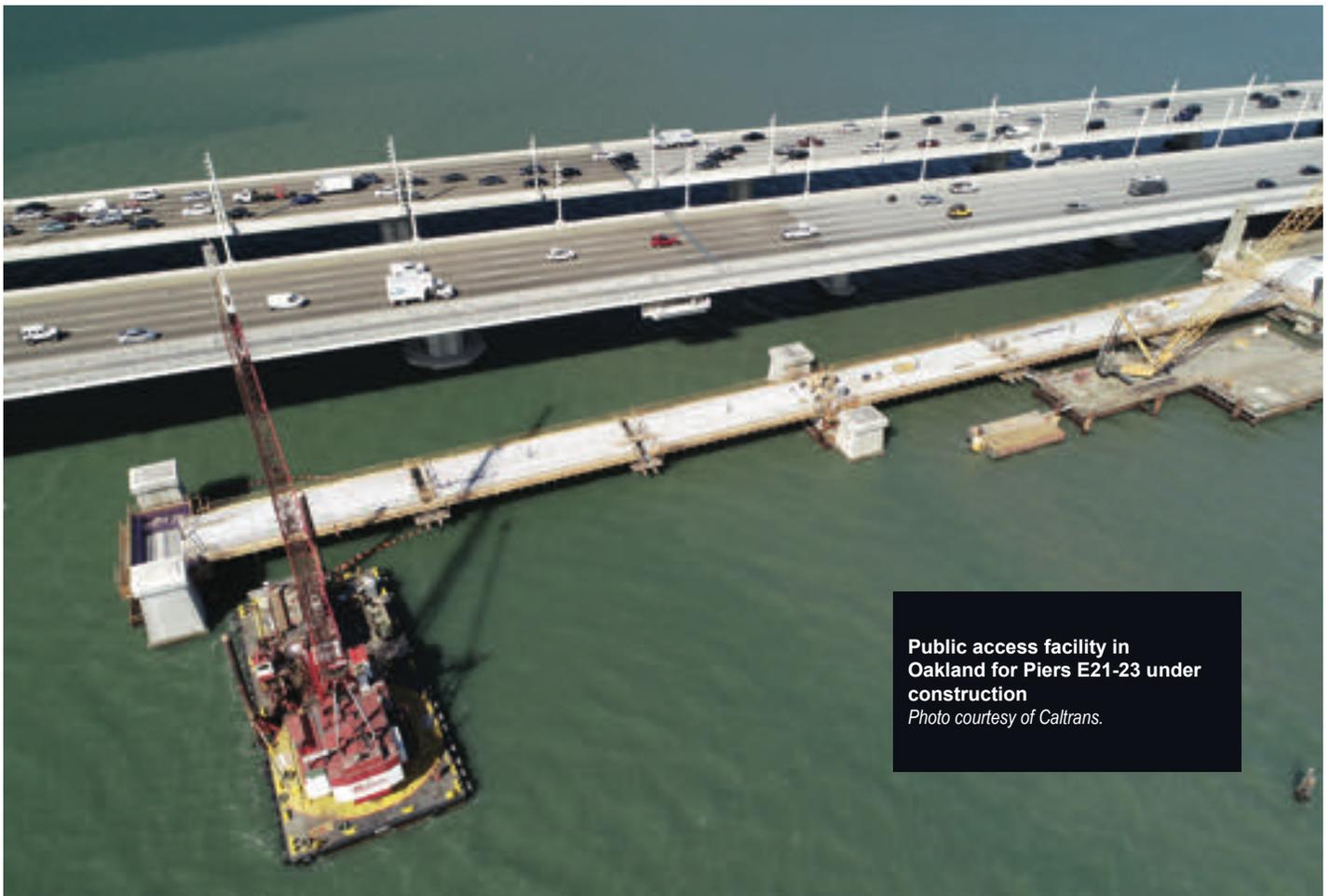
Contractor: Kiewit/Manson

Status: 58% Complete as of September 2018

The Bay Bridge project environmental document and resource agency permits included removing all marine based piers of the old Bay Bridge east span. In lieu of removing the piers, the TBPOC was presented with a proposal to re-purpose the piers as part of observation decks along both the YBI shoreline and Oakland shoreline as environmental enhancements.

Caltrans awarded a contract to Kiewit/Mason on April 3, 2018 to demolish piers E19 and E20 and construct the observation decks and associated access improvements from Piers E21 to E23 and at Pier E2.

Status: Piers E19 and E20 were imploded in September 2018. The Contractor mobilized, procured long lead time items and began mechanical demolition of the piers. Pier girders have been installed on both the SF and Oakland sides. The Contractor is now finishing the pier decks and working on railings and approaches. Work is expected to be completed in August 2019.



San Francisco-Oakland Bay Bridge East Span Replacement Project

Self-Anchored Suspension Bridge Superstructure

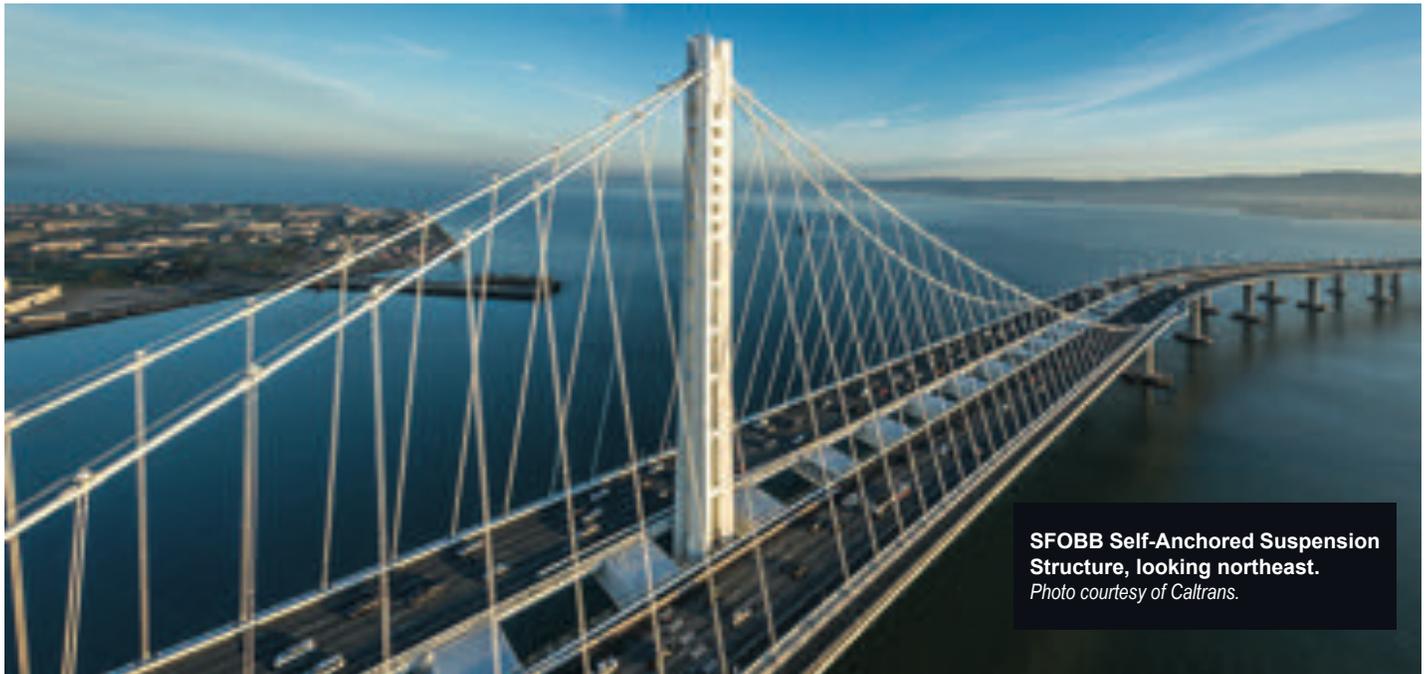
Approved Capital Outlay Budget: \$2.01 B

Contractor: American Bridge/Fluor Enterprises, JV

Status: 100% Completed

The self-anchored suspension span (SAS) of the bridge is not just another suspension bridge. Rising 525 feet above mean sea level and embedded in bedrock, the single-tower SAS span is designed to withstand a massive earthquake. Traditional main cable suspension bridges have twin cables with smaller suspender cables connected to them. While there appears to be two main cables on the SAS, it is actually a single continuous cable. This single cable is anchored within the eastern end of the roadway, carried over the tower and then wrapped around the two side-by-side decks at the western end.

The single-steel tower is made up of four separate legs connected by shear link beams, which function much like a fuse in an electrical circuit. These beams will absorb most of the impact from an earthquake, preventing damage to the tower legs.



SFOBB Self-Anchored Suspension Structure, looking northeast.
Photo courtesy of Caltrans.

Status: During the contract arbitration process for the SAS Contract dispute with the contractor, the parties met in mediation and reached a tentative agreement for the settlement of all claims for a payment of \$25.5 million to the Contractor and a waiver of \$8,536,370 in accounts receivable. The settlement was presented and approved by the TBPOC at their June 21, 2018 meeting and payment was made to the contractor soon thereafter, the contract is now complete.

Risk Management Program Update

POTENTIAL DRAW ON PROGRAM RESERVE (PROGRAM CONTINGENCY)

Caltrans continues to implement comprehensive risk management on all TBSRP projects in accordance with AB 144. Risk response efforts continue to focus on mitigating the estimated cost and schedule impacts of identified risks. The “bottom line” of cost risk analysis is whether the Program Contingency remains adequate to cover all identified risks.

Each contract has a contingency allowance within its budget. The sum of these contingency allowances is compared to the total of capital outlay, capital outlay support and program-wide risks. Any excess of the risks over the contingency allowances represents a potential draw on the program contingency. The program contingency, as of the third quarter of 2018, is currently \$63.58 million in accordance with the TBPOC approved budget. As of the end of the third quarter of 2018, the 50 percent probable draw on program contingency is \$28.74 million. The potential draw ranges from about \$15 million to \$45 million (refer to Figure 1). The \$28.74 million probable draw on program contingency gives a forecast surplus of \$34.8 million at program completion to the

current approved program budget. This represents a \$0.7 million improvement in the program’s bottom line since last quarter.

In general, the bottom line trend for the program has been improving for the last two years, with the forecast turning from a \$143.2 million deficit to a \$35.0 million forecast surplus (i.e. a \$178 million improvement) since the deficit peaked in the third quarter of 2015.

Since 2010, the TBPOC has approved the removal of \$483 million from the TBSRP budget (consisting of Antioch Savings (4/12/10) \$137 million, Dumbarton Savings (9/02/10) \$216 million and Program Contingency Redirection (11/05/13) \$130 million), bringing the current approved program budget to \$8.952 billion. The program contingency is currently sufficient to cover the cost of identified risks and it is now very unlikely that BATA will need to allocate additional toll funds from its reserves.

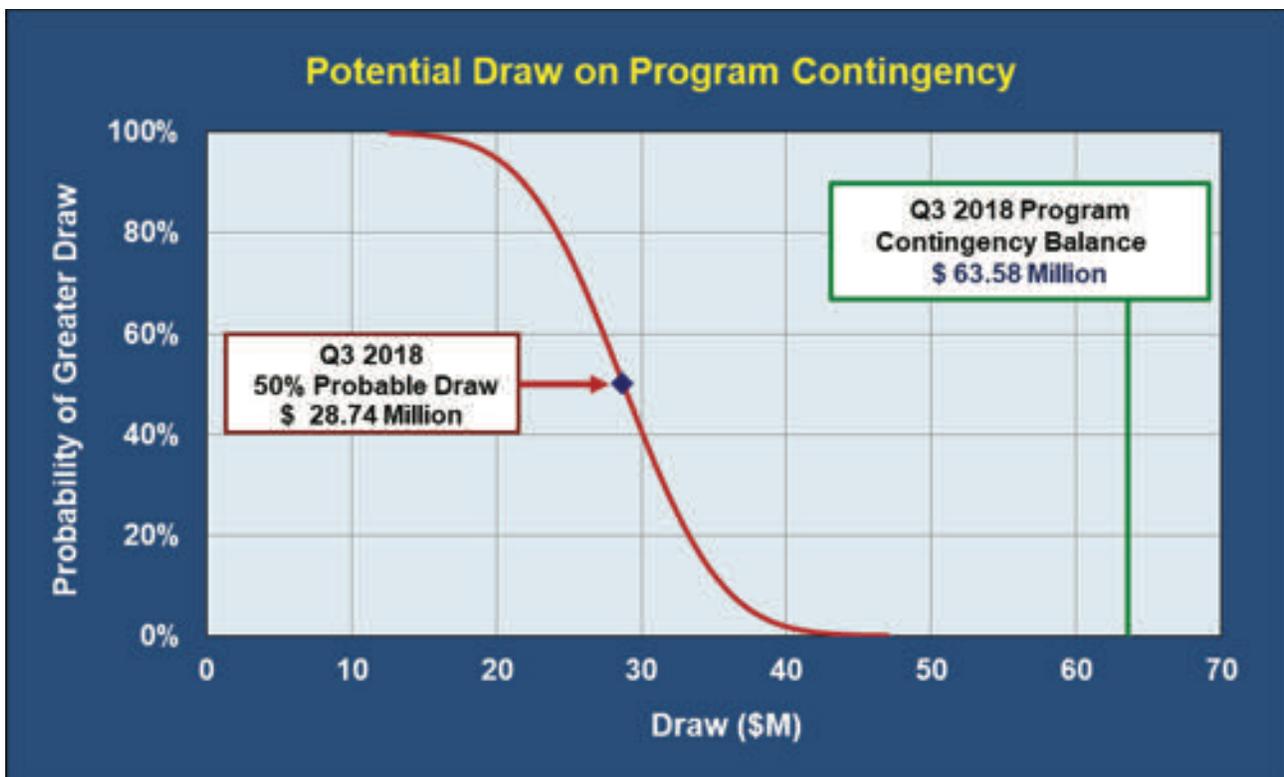


Figure 1 – Potential Draw on Program Contingency¹

1. Proposed architectural enhancements and project improvements are excluded unless approved by the TBPOC.

RISK MANAGEMENT DEVELOPMENTS

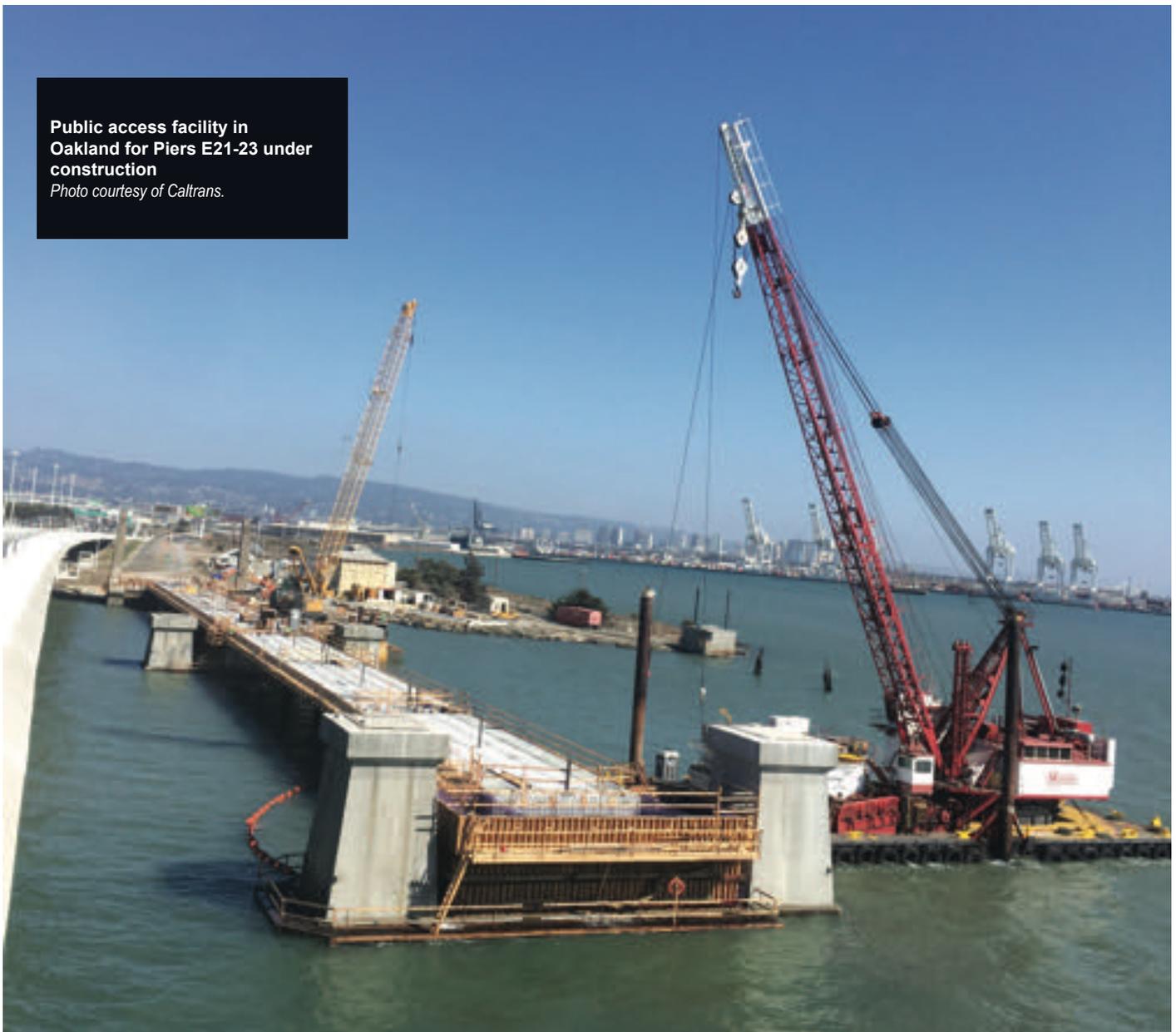
Positive Assessment by California State Auditors:

Beginning in February 2018 project team managers and key staff coordinated, researched and responded to the State Audit staff in support of the audit as requested by the Joint Legislative Audit Committee. In August 2018 the California State Auditor (CSA) presented the final audit report concerning the Toll Bridge Seismic Retrofit Program (seismic program) including work to replace a section of the San Francisco–Oakland Bay Bridge construction project.

The CSA found that the effective use of oversight and risk management in the \$9 billion seismic program provides a valuable lesson for the State. The report concludes that the State could save millions of dollars annually by mandating oversight and risk management lessons learned from the seismic program to other mega projects statewide. Requiring early oversight committee involvement and risk management plans for major publicly funded transportation projects could mitigate these risks and ensure transparency and accountability throughout California.

Public access facility in Oakland for Piers E21-23 under construction

Photo courtesy of Caltrans.



SFOBB East Span COS Budget

Budget to Completion: The third quarter 2018 COS forecast to completion is \$1,358.44 million, which results in a cost variance of \$6.1 million to the current budget. This is a \$46.4 million improvement over the fourth quarter 2015 forecast, when the COS forecast peaked at \$1,404.8 million. The current approved budget of \$1,352.36 million for SFOBB East Span COS will fund the program COS through the end of June 2019.

Expenditures vs. Budget for 2017/18 Fiscal Year:

On August 28, 2017, the TBPOC approved a total COS budget of \$16.5 million for the 2017/18 fiscal year. An additional \$1 million for retention work on the E2, E19 to E23 Marine Foundations was also approved by the TBPOC at the same meeting. Finally, in the December 12, 2017 TBPOC meeting, the TBPOC approved an additional \$3 million for pursuing Pier Retention. This increased the final 2017/18 fiscal year COS budget to \$20.5 million. The final total expenditures for FY 2017/18 were \$16.7 million, resulting in \$3.8 million in residual budget being available to pay for the FY 2018/19 COS allocation.

Yerba Buena Island Transition Structure #2 Contract

Contract Closed Out: The contract was accepted on November 29, 2017 and there were no outstanding disputes with the Contractor at that time. The project team issued the final estimate to the contractor in Q2 2018 and the Contractor did not pursue any claims, the contract is now closed out.

Marine Foundation E2, E21 & E22 Pier Retention

Permitting Contract for E2, E21, E22 Pier Retention & E19, E20 Demolition: Caltrans awarded the contract on April 3, 2018 with a contract allotment of \$52 million. The Contractor mobilized, procured long lead time items and began mechanical demolition of the piers. The project environmental team diligently pursued seven different permits and secured the permits by the end of July to allow the contract to be substantially complete with all marine work by December 31, 2018. The permits came with additional requirements which the team worked to build into the Contract during the third quarter.

Close Out of historic contaminated sites on YBI:

There are several historic contaminated sites on YBI that were the result of the Navy's past activities on the island. The Navy postponed clean-up of these sites pending completion of the SFOBB East Span replacement project. One of these sites (Site #11) lies under the area

the TBSRP plans to build a parking lot to facilitate public access to pier E2. There is a risk that, to move the Pier Retention project forward, that the TBSRP might be held responsible for a portion of the cleanup costs.

The project team has identified several risks in both the project and program risk registers that Caltrans might be found to be the responsible party for these sites rehabilitation, these risks carry a high-end exposure of \$10 million, with a probable cost of \$6.1 million carried in the forecast numbers.

Caltrans is currently developing a workplan to define the nature and extent of the contamination and developing a scoping document for remediation alternatives as it relates to interim work, and long-term remediation. Once approved, implementation of these remediation alternatives will take place and then monitoring/reporting may take 1-5 years to complete.

RISK MANAGEMENT LOOK AHEAD

SFOBB East Span COS Budget

Budget Increase: The current approved budget of \$1,352.36 million for SFOBB East Span COS will be fully expended and will need to be increased by the end of June 2018. On June 21, 2018 the TBPOC approved an additional \$5 million in COS budget, but BATA Oversight Committee has yet to approve that budget request. Before the end of June 2018, the TBPOC/BATA will need to approve a FY 2019/20 COS allocation and an increase in the overall SFOBB East Span COS budget by a commensurate amount.

Marine Foundation E2, E21 & E22 Pier Retention

Increased cost of required permit amenities: The project environmental team secured the required permits by the end of July to allow the contract to be substantially complete with all marine work by December 31, 2018. The permits came with additional requirements which the team worked to build into the Contract during the third quarter 2018. These additional permit requirements came at an additional cost of about \$5.7 million, that will need to be allocated to the Contract by the TBPOC in Q4 2018.

Close Out historic contaminated sites on YBI: Project Environmental and Legal team will reinstate coordination with the US Navy in accordance with the Interim Site 11 Remedial Investigation Report (2010). Caltrans will work with the Navy to consult with resource agencies to develop workplans for final closure of these contaminated sites.

Program Funding Status

AB 144 established a funding level of \$8.685 billion for the TBSRP. As of January 1, 2010, seismic retrofitting of Antioch and Dumbarton Bridges became part of the Toll Bridge Seismic Retrofit Program with the passage of AB 1175, which provided another \$750 million bringing the total funding to \$9.435 billion. On April 9, 2010, the TBPOC approved a \$137 million reduction in the TBSRP program budget as a result of savings from the Antioch Bridge Retrofit. On September 2, 2010, the TBPOC approved a \$216 million reduction in the TBSRP program budget as a result of savings from the Dumbarton Bridge Retrofit. And finally, on November 5, 2013, the TBPOC approved a \$130 million reduction in the TBSRP program budget as a result of a reduction in the program contingency, bringing the current approved TBSRP budget to \$8.952 billion (see Appendix A-1). The program funding sources are shown in Table 1 - Program Budget.

Table 1 - Program Budget as of September 30, 2018 (\$ millions)	Budgeted	Funding Available & Contribution
Financing		
Seismic Surcharge Revenue AB 1171	2,282.0	2,282.0
Seismic Surcharge Revenue AB 144	2,150.0	2,150.0
Seismic Surcharge Revenue AB 1175 ⁽¹⁾	750.0	750.0
BATA Consolidation	820.0	820.0
Subtotal - Financing	6,002.0	6,002.0
Contributions		
Proposition 192	790.0	790.0
San Diego Coronado Toll Bridge Revenue Fund	33.0	33.0
Vincent Thomas Bridge ⁽²⁾	15.0	6.9
State Highway Account ⁽³⁾	745.0	745.0
Public Transportation Account ⁽³⁾	130.0	130.0
ITIP/SHOPP/Federal Contingency ⁽³⁾	448.0	448.0
Federal Highway Bridge Replacement and Rehabilitation (HBRR) ⁽³⁾	642.0	642.0
SHA - East Span Dismantling ⁽³⁾	300.0	300.0
SHA - "Efficiency Savings" ⁽³⁾	130.0	130.0
Redirect Spillover ⁽³⁾	125.0	125.0
Motor Vehicle Account ⁽³⁾	75.0	75.0
Subtotal - Contribution	3,433.0	3,424.9
Total Funding	9,435.0	9,426.9
Allocated to Date		8,862.31
Remaining Unallocated		564.6
Expenditures :		
Capital Outlay		6,928.54
State Operations		1,877.6
Antioch and Dumbarton Expenditures by BATA		18.6
	Total Expenditures	8,824.8
Encumbrances :		
Capital Outlay		24.2
State Operations		13.3
	Total Encumbrances	37.5
Total Expenditures and Encumbrances ⁽⁴⁾		8,862.3
<p>⁽¹⁾ The Vincent Thomas Bridge state funds contribution was finalized in legislation and statutes to be \$6.9 million and no additional funds were identified in AB144 to address the funding gap, in Q2 2018 BATA agreed to fund the shortfall.</p> <p>⁽²⁾ The California Transportation Commission adopted a new schedule and changed the PTA/SHA split on December 15, 2005.</p> <p>⁽³⁾ As of January 1, 2010, seismic retrofitting of Antioch and Dumbarton Bridges became part of the Toll Bridge Seismic Retrofit Program with the passage of AB 1175.</p> <p>⁽⁴⁾ The Skyway contract is the only contract in the San Francisco-Oakland Bay Bridge East Span Seismic Safety Project with federal funds. The Federal Aid Project No. is 0801(090) for the amount of \$321,645,209.22. No other federal funds will be used on this project in the future.</p>		

Summary of the Toll Bridge Oversight Committee Expenses

Pursuant to Streets and Highways Code Section 30952.1 (d), expenses incurred by Caltrans, BATA, and the California Transportation Commission (CTC) for costs directly related to the duties associated with the TBPOC are to be reimbursed by toll revenues. Table 3 -Toll Bridge Program Oversight Committee Estimated Expenses: July 1, 2005, through September 30, 2018, for TBPOC functioning, support, and monthly and quarterly reporting.

**Table 2—CTC Toll Bridge Seismic Retrofit Program Contributions Adopted December 2005
Schedule of Contributions to the Toll Bridge Seismic Retrofit Program (\$ Millions)**

Source	Description	2005-06 (Actual)	2006-07 (Actual)	2007-08 (Actual)	2008-09 (Actual)	2009-10 (Actual)	2010-11 (Actual)	2011-12 (Actual)	2012-13 (Actual)	2013-14 (Actual)	Total
AB 1171	SHA	290									290
	PTA	80	40								120
	Highway Bridge Replacement and Rehabilitation (HBRR)	100	100	100	42						342
	Contingency				1	99	100	100	148		448
AB 144	SHA*	2	8				53	50	17		130
	Motor Vehicle Account (MVA)	75									75
	Spillover		125								125
	SHA**									300	300
	Total	547	273	100	43	99	153	150	165	300	1,830

* Caltrans Efficiency Savings
** SFOBB East Span Dismantling Cost.
*** Actual as of September 30, 2018

**Table 3—Toll Bridge Program Oversight Committee
Estimated Expenses: July 1, 2005 through September 30, 2018 (\$ Millions)**

Agency/Program Activity	Expenses
BATA	3.0
Caltrans	4.1
CTC	3.7
Reporting	5.9
Total Program	16.6

Quarterly Environmental Compliance Highlights

Overall environmental compliance for the San Francisco-Oakland Bay Bridge (SFOBB) East Span Seismic Safety Project (SFOBB Project) has been a success during the 3rd Quarter of 2018. The tasks for the current quarter were focused on biological monitoring in support of construction activities and pier retention and removal permitting.

Key Successes

Bird monitoring was conducted weekly in compliance with the project's Bird Monitoring Plans. The goal of this monitoring was to document potential impacts to birds from construction activities associated with pier removal and retention.

The environmental monitoring team was very effective in working collaboratively with the marine foundation contractor to remove nest starts, nests, and eggs from the construction area to avoid delays to the work. Environmental also worked with the resident engineer and contractor to install cormorant escape ramps in the open voids of the marine foundations.

The environmental team provided monitoring support during the mechanical demolition of Piers E2 and E19 to E23, as well as pre-blast drilling of the Piers E19 and E20 marine foundations. Water quality monitoring was conducted throughout mechanical dismantling activities.

The environmental team continued to work on obtaining regulatory clearance for SFOBB pier retention and removal in the 3rd quarter of 2018. Environmental presented the pier retention concept to the San Francisco Bay Conservation and Development Commission (BCDC) at a public hearing on July 19, 2018. Meetings were also held with United States Army Corps of Engineers (Corps) and National Marine Fisheries Service (NMFS) regarding conditions of project approval. The team

obtained regulatory permits and authorizations for SFOBB pier retention and removal from all appropriate natural resource agencies. The Regional Water Quality Control Board issued the Department a modification to the SFOBB Project Waste Discharge Requirements for pier retention for public access on April 30, 2018. NMFS Office of Protected Resources issued the Department an Incidental Harassment Authorization on May 24, 2018 which authorized limited take of marine mammals incidental to pier implosion and pile driving activities. The Corps issued the Department a Letter of Modification (LOM) authorizing pre-implosion activities on May 24, 2018; a second LOM was issued to the Department on July 20, 2018 for implosion of Piers E19 and E20, retention of Piers E2 and E21 to E23 for beneficial reuse as foundations for new public access piers. BCDC Amendment No. 43 was issued to Department on April 20, 2018 for pre-implosion activities; Amendment No. 44 was issued to the Department on July 19, 2018 and authorized implosion of Piers E19 and E20 and retention/reuse of Piers E2 and E21 to E23 for public access piers.

The environmental team performed biological monitoring in support of pile driving in July 2018 and the Piers E19 and E20 implosion event on September 8, 2018. For the pier implosion event, the blast attenuation system was deployed prior to the implosions and operated correctly during the implosion event. Department biologists monitored for birds, marine mammals, noise levels, and water quality prior to, during, and following the implosion. The Department also conducted fish sonar surveys, salvage fish collection, and bird predation monitoring to assess impacts to fish. Hydrographic surveys were conducted following the implosions to aid in clean-up efforts. Overall, no impacts to special-status species were observed by biological monitors as a result of the implosion events associated with the removal of Piers E19 and E20.

APPENDICES

A. TBSRP AB 144/SB 66/ AB 1175 Baseline Budget, Forecasts and Expenditures through September 30, 2018 (A-1 and A-2).....	16
B. TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through September 30, 2018.....	20
Glossary of Terms.....	25

Appendix A-1: TBSRP AB 144/SB 66/AB 1175 Baseline Budget, Forecasts and Expenditures Through September 30, 2018, by bridge including program contingency (\$ Millions)

Contract	AB 144/SB 66/AB 1175	Approved Changes	Current Approved Budget (9/2018)	Cost to Date (9/2018)	Cost Forecast (9/2018)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
SFOBB East Span Replacement Project						
Capital Outlay Support	959.3	393.1	1,352.4	1,333.1	1,358.4	6.0
Capital Outlay Construction	4,492.2	663.7	5,155.9	5,112.2	5,166.9	11.0
Other Budgeted Capital	35.1	(34.4)	0.7	0.7	0.7	-
Total	5,486.6	1,022.4	6,509.0	6,446.0	6,526.0	17.0
SFOBB West Approach Replacement						
Capital Outlay Support	120.0	(0.5)	119.5	119.4	119.5	-
Capital Outlay Construction	309.0	24.1	333.1	333.0	333.1	-
Total	429.0	23.6	452.6	452.4	452.6	-
SFOBB West Span Retrofit						
Capital Outlay Support	75.0	(0.2)	74.8	74.8	74.8	-
Capital Outlay Construction	232.9	(2.4)	230.5	230.5	230.5	-
Total	307.9	(2.6)	305.3	305.3	305.3	-
Richmond-San Rafael Bridge Retrofit*						
Capital Outlay Support	134.0	(7.2)	126.8	126.7	126.8	-
Capital Outlay Construction	780.0	(111.8)	668.2	668.1	668.1	(0.1)
Total	914.0	(119.0)	795.0	794.8	794.9	(0.1)
Benicia-Martinez Bridge Retrofit						
Capital Outlay Support	38.1	-	38.1	38.1	38.1	-
Capital Outlay Construction	139.7	-	139.7	139.7	139.7	-
Total	177.8	-	177.8	177.8	177.8	-
Carquinez Bridge Retrofit						
Capital Outlay Support	28.7	0.1	28.8	28.8	28.8	-
Capital Outlay Construction	85.5	(0.1)	85.4	85.4	85.4	-
Total	114.2	-	114.2	114.2	114.2	-
San Mateo-Hayward Bridge Retrofit						
Capital Outlay Support	28.1	-	28.1	28.1	28.1	-
Capital Outlay Construction	135.4	(0.1)	135.3	135.3	135.3	-
Total	163.5	(0.1)	163.4	163.4	163.4	-
Vincent Thomas Bridge Retrofit (Los Angeles)						
Capital Outlay Support	16.4	-	16.4	16.4	16.4	-
Capital Outlay Construction	42.1	-	42.1	42.0	42.1	-
Total	58.5	-	58.5	58.4	58.5	-
San Diego-Coronado Bridge Retrofit						
Capital Outlay Support	33.5	(0.3)	33.2	33.2	33.2	-
Capital Outlay Construction	70.0	-	70.0	70.0	70.0	-
Total	103.5	(0.3)	103.2	103.2	103.2	-

Appendix A-1: TBSRP AB 144/SB 66/AB 1175 Baseline Budget, Forecasts and Expenditures Cont. Through September 30, 2018, by bridge including program contingency (\$ Millions)

Contract	AB 144/SB 66/AB 1175	Approved Changes	Current Approved Budget (9/2018)	Cost to Date (9/2018)	Cost Forecast (9/2018)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Antioch Bridge						
Capital Outlay Support	-	24.1	24.1	17.4	24.2	0.1
Capital Outlay Support by BATA				6.7		
Capital Outlay Construction	-	47.0	47.0	47.0	47.0	-
Total	267.0	71.1	71.1	71.1	71.2	0.1
Dumbarton Bridge						
Capital Outlay Support	-	47.5	47.5	39.5	47.5	-
Capital Outlay Support by BATA				7.9		
Capital Outlay Construction	-	64.9	64.9	64.4	64.7	(0.2)
Total	483.0	112.4	112.4	111.8	112.2	(0.2)
Subtotal Capital Outlay Support	1,682.9	206.8	1,889.6	1,870.3	1,895.8	6.2
Subtotal Capital Outlay	6,787.1	185.1	6,972.1	6,927.8	6,982.8	10.7
Subtotal Other Budgeted Capital	35.1	(34.4)	0.7	0.7	0.7	-
Miscellaneous Program Costs	30.0	(4.0)	26.0	26.0	26.0	-
Subtotal Toll Bridge Seismic Retrofit Program	8,535.0	363.4	8,888.4	8,824.8	8,905.3	16.9
Net Programmatic Risks**	-	-	-	-	11.9	11.9
Program Contingency	900.0	(856.4)	63.6	-		
Total Toll Bridge Seismic Retrofit Program***	9,435.0	(483.0)	8,952.0	8,824.8	8,917.2	(34.8)

* Budget for Richmond-San Rafael Bridge included \$16.9 million for deck joint rehabilitation work that was considered to be eligible for seismic retrofit program funding. On 6/21/18 TBPOC approved plan to fund this work from the Toll Bridge Rehabilitation account, freeing up \$16.9 million in Toll Bridge Seismic contingency transferred to Program Contingency in Q3 2018.

** Programmatic Risks: Consists of \$11.9 million in Q3 2018 Program Risk Register costs (\$16.9 in Richmond-San Rafael (R/SR) Bridge deck joint replacement now charged to Toll Bridge Rehabilitation account).

*** AB144/SB66 established a funding level of \$8.685 Billion in July 2005 for TBSRP. AB1175 added the retrofitting of the Antioch and Dumbarton Bridges in January 2010, providing another \$750 million in funding, bringing Total Toll Bridge Seismic Retrofit Program funding to \$9.435 Billion. Since 2010, \$483 million has been removed from the program, bringing the current TBPOC Approved Budget to \$8.952 Billion. The \$483 million removed consisted of:

- Antioch Savings (4/12/10) \$137 million
- Dumbarton Savings (9/02/10) \$216 million
- Program Contingency Redirection (11/05/13) \$130 million.

**** Approved TBPOC East Span Capital Outlay Support Budget does not include \$5 million approved on June 21, 2018 by TBPOC, that needs to be approved by BATA.

(Due to the rounding of numbers, the totals above are show within \$0.1)

Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures

Through September 30, 2018, by major contract, without program contingency (\$ Millions)

Bridge	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and encumbrances as of (9/2018) see Note (1)	Estimated costs not yet spent or encumbered as of (9/2018)	Total Forecast as of (9/2018)
a	b	c	d	e	f = d + e
Other Completed Projects					
Capital Outlay Support	144.9	144.9	144.6	-	144.6
Capital Outlay	472.6	472.6	471.9	0.6	472.5
Total	617.5	617.5	616.5	0.6	617.1
Richmond-San Rafael					
Capital Outlay Support	134.0	127.0	126.8	-	126.8
Capital Outlay	698.0	685.1	667.5	0.6	668.1
Project Reserves	82.0	-	-	-	-
Total	914.0	812.1	794.3	0.6	794.9
West Span Retrofit					
Capital Outlay Support	75.0	74.8	74.9	(0.1)	74.8
Capital Outlay	232.9	230.5	230.5	-	230.5
Total	307.9	305.3	305.4	(0.1)	305.3
West Approach					
Capital Outlay Support	120.0	119.5	119.5	-	119.5
Capital Outlay	309.0	333.1	333.1	-	333.1
Total	429.0	452.6	452.6	-	452.6
SFOBB East Span -Skyway					
Capital Outlay Support	197.0	181.2	181.2	-	181.2
Capital Outlay	1,293.0	1,236.1	1,237.3	-	1,236.1
Total	1,490.0	1,417.3	1,417.3	-	1,417.3
SFOBB East Span -SAS- Superstructure					
Capital Outlay Support	214.6	509.8	511.3	0.6	511.9
Capital Outlay	1,753.7	2,009.4	2,009.4	-	2,009.4
Total	1,968.3	2,519.2	2,520.7	0.6	2,521.3
SFOBB East Span -SAS- Tower Anchor Rod Grouting					
Capital Outlay Support	-	3.0	0.8	-	0.8
Capital Outlay	-	8.9	8.9	-	8.9
Total	-	11.9	9.7	-	9.7
SFOBB East Span -SAS- Foundations					
Capital Outlay Support	62.5	37.6	37.6	-	37.6
Capital Outlay	339.9	301.3	301.3	-	301.3
Total	402.4	338.9	338.9	-	338.9
Small YBI Projects					
Capital Outlay Support	10.6	10.2	10.2	-	10.2
Capital Outlay	15.6	15.2	15.2	-	15.2
Total	26.2	25.4	25.4	-	25.4
YBI Detour					
Capital Outlay Support	29.5	87.7	87.9	-	87.9
Capital Outlay	131.9	473.3	473.3	0.1	473.4
Total	161.4	561.0	561.2	0.1	561.3

Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures Cont.

Through September 30, 2018, by major contract, without program contingency (\$ Millions)

Contract	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and encumbrances as of (9/2018) see Note (1)	Estimated costs not yet spent or encumbered as of (9/2018)	Total Forecast as of (9/2018)
a	b	c	d	e	f = d + e
YBI - Transition Structures					
Capital Outlay Support	78.7	152.4	147.1	7.2	154.3
Capital Outlay	299.4	314.7	312.6	2.2	314.8
Total	378.1	467.1	459.7	9.4	469.1
Oakland Touchdown					
Capital Outlay Support	74.4	118.7	118.3	-	118.3
Capital Outlay	283.8	326.4	326.5	-	326.5
Total	358.2	445.1	444.8	-	444.8
East Span Other Small Projects					
Capital Outlay Support	212.3	197.9	197.9	-	197.9
Capital Outlay	170.8	138.2	133.9	-	133.9
Total	383.1	336.1	331.8	-	331.8
Existing Bridge Demolition					
Capital Outlay Support	79.7	53.9	54.0	4.6	58.6
Capital Outlay	239.2	333.1	320.9	27.4	348.3
Total	318.9	387.0	374.9	32.0	406.9
Antioch Bridge					
Capital Outlay Support	-	24.1	17.4	0.1	17.5
Capital Outlay Support by BATA	-	-	6.7	-	6.7
Capital Outlay	-	47.0	47.0	-	47.0
Total	267.0	71.1	71.1	0.1	71.2
Dumbarton Bridge					
Capital Outlay Support	-	47.5	39.6	-	39.6
Capital Outlay Support by BATA	-	-	7.9	-	7.9
Capital Outlay	-	64.9	64.7	-	64.7
Total	483.0	112.4	112.2	-	112.2
Miscellaneous Program Costs	30.0	26.0	26.0	-	26.0
Total Capital Outlay Support ⁽²⁾	1,712.9	1,915.5	1,909.5	12.4	1,921.9
Total Capital Outlay	6,822.1	6,972.9	6,952.8	30.6	6,983.4
Program Total	8,535.0	8,888.4	8,862.3	43.0	8,905.3

(1) Total Capital Outlay Support includes program indirect costs.

(2) Construction administration of the OTD Detour is under the YBITS1 contract. Encumbrance is included in YBITS 1 contract.

(3) Construction administration of the Cantilever segment is under the YBITS2 contract. Encumbrance is included in YBITS2 contract.

(4) Approved TBPOC East Span Capital Outlay Support Budget does not include \$5 million approved on June 21, 2018 by TBPOC, that needs to be approved by BATA. (Due to the rounding of numbers, the totals above are shown within \$0.1)

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures

Through September 30, 2018 (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (9/2018)	Cost to Date (9/2018)	Cost Forecast (9/2018)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
San Francisco-Oakland Bay Bridge East Span Replacement Project						
East Span - SAS Superstructure						
Capital Outlay Support	214.6	295.2	509.8	511.3	511.9	2.1
Capital Outlay Construction	1,753.7	255.7	2,009.4	2,006.5	2,009.4	-
Total	1,968.3	550.9	2,519.2	2,517.8	2,521.3	2.1
SAS Tower Anchor Rod Grouting						
Capital Outlay Support	-	3.0	3.0	0.8	0.8	(2.2)
Capital Outlay Construction	-	8.9	8.9	8.7	8.9	-
Total	-	11.9	11.9	9.5	9.7	(2.2)
SAS W2 Foundations						
Capital Outlay Support	10.0	(0.8)	9.2	9.2	9.2	-
Capital Outlay Construction	26.4	0.1	26.5	26.5	26.5	-
Total	36.4	(0.7)	35.7	35.7	35.7	-
YBI South/South Detour						
Capital Outlay Support	29.4	58.3	87.7	87.9	87.9	0.2
Capital Outlay Construction	131.9	341.4	473.3	473.4	473.4	0.1
Total	161.3	399.7	561.0	561.3	561.3	0.3
East Span - Skyway						
Capital Outlay Support	197.0	(15.8)	181.2	181.2	181.2	-
Capital Outlay Construction	1,293.0	(56.9)	1,236.1	1,235.6	1,236.1	-
Total	1,490.0	(72.7)	1,417.3	1,416.8	1,417.3	-
East Span - SAS E2/T1 Foundations						
Capital Outlay Support	52.5	(24.1)	28.4	28.4	28.4	-
Capital Outlay Construction	313.5	(38.7)	274.8	274.8	274.8	-
Total	366.0	(62.8)	303.2	303.2	303.2	-
YBI Transition Structures (see notes below)						
Capital Outlay Support	78.7	73.7	152.4	143.2	154.3	1.9
Capital Outlay Construction	299.3	15.4	314.7	310.6	314.8	0.1
Total	378.0	89.1	467.1	453.8	469.1	2.0
* YBI - Transition Structures						
Sunk Cost			16.4	16.4	16.4	-
Cost Outlay Support BATA (Southgate Road)			6.4	4.1	6.4	-
Cost Outlay BATA (Southgate Road)			3.2	-	3.2	-
Total			26.0	20.5	26.0	-
* YBI - Transition Structures Contract No. 1						
Capital Outlay Support			72.1	71.2	71.2	(0.9)
Capital Outlay Construction			203.7	203.2	203.8	0.1
Total			275.8	274.4	275.0	(0.8)
* YBI - Transition Structures Contract No. 2						
Capital Outlay Support			56.5	55.5	56.9	0.4
Capital Outlay Construction			107.8	107.2	107.8	-
Total			164.3	162.7	164.7	0.4
* YBI - Transition Structures Contract No. 3 Landscape						
Capital Outlay Support			1.0	0.3	1.0	-
Capital Outlay Construction			-	-	-	-
Total			1.0	-	1.0	-

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures

Through September 30, 2018 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (9/2018)	Cost to Date (9/2018)	Cost Forecast (9/2018)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Oakland Touchdown (see notes below)						
Capital Outlay Support	74.4	44.3	118.7	118.2	118.3	(0.4)
Capital Outlay Construction	283.8	42.6	326.4	326.5	326.5	0.1
Total	358.2	86.9	445.1	444.7	444.8	(0.3)
* OTD Prior-to-Split Costs						
Capital Outlay Support			20.1	20.0	20.0	(0.1)
Capital Outlay Construction			-	-	-	-
Total			20.1	20.0	20.0	(0.1)
* OTD Submarine Cable(1)						
Capital Outlay Support			0.9	0.9	0.9	-
Capital Outlay Construction			5.7	5.7	5.7	-
Total			6.6	6.6	6.6	-
* OTD No. 1 (Westbound)						
Capital Outlay Support			51.2	51.2	51.2	-
Capital Outlay Construction			202.8	202.8	202.8	-
Total			254.0	254.0	254.0	-
* OTD No. 2 (Eastbound)						
Capital Outlay Support			37.6	37.4	37.4	(0.2)
Capital Outlay Construction			71.2	71.2	71.2	-
Total			108.8	108.6	108.6	(0.2)
* OTD Touchdown 2 Detour⁽²⁾						
Capital Outlay Support			8.1	8.0	8.0	(0.1)
Capital Outlay Construction			46.7	46.7	46.7	-
Total			54.8	54.7	54.7	(0.1)
* OTD Electrical Systems						
Capital Outlay Support			0.8	0.8	0.8	-
Capital Outlay Construction			-	-	-	-
Total			0.8	0.8	0.8	-
Existing Bridge Dismantling						
Capital Outlay Support	79.7	(25.8)	53.9	44.9	58.6	4.7
Capital Outlay Construction	239.2	93.9	333.1	307.1	348.3	15.2
Total	318.9	68.1	387.0	352.0	406.9	19.9
* Bridge Dismantling Prior-to-Split Cost						
Capital Outlay Support			3.9	3.9	3.9	-
Capital Outlay Construction			-	-	-	-
Total			3.9	3.9	3.9	-
* Cantilever Section						
Capital Outlay Support			1.6	1.6	1.6	-
Capital Outlay Construction			69.0	68.5	69.0	-
Total			70.6	70.1	70.6	-
* 504/288 Sections						
Capital Outlay Support			11.0	10.2	10.8	(0.2)
Capital Outlay Construction			81.8	79.0	81.8	-
Total			92.8	89.2	92.6	(0.2)

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures

Through September 30, 2018 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (9/2018)	Cost to Date (9/2018)	Cost Forecast (9/2018)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
*Marine Foundations						
Capital Outlay Support			37.4	29.2	42.3	4.9
Capital Outlay Construction			182.3	159.6	197.4	15.1
Total			219.7	188.8	239.7	20.0
Sunk Cost for Marine Foundation			5.8	5.8	5.8	-
Pier-3 Demonstration Project						
Capital Outlay Support			4.0	4.0	4.0	-
Capital Outlay Construction			16.8	16.8	16.8	-
Total			20.8	20.8	20.8	-
Remaining Marine Foundations²						
Capital Outlay Support			27.6	19.5	32.6	5.0
Capital Outlay Construction			165.5	142.8	180.6	15.1
Total			193.1	162.3	213.2	20.1
Pier-E4 to Pier-E18						
Capital Outlay Support			12.0	11.7	12.0	-
Capital Outlay Construction			109.7	109.8	109.7	-
Total			121.7	121.5	121.7	-
Pier-E2 and Pier-E19 to Pier-E22						
Capital Outlay Support			15.6	7.8	20.6	5.0
Capital Outlay Construction			55.8	32.9	71.0	15.2
Total			71.4	40.7	91.6	20.2
YBI/SAS Archeology						
Capital Outlay Support	1.1	-	1.1	1.1	1.1	-
Capital Outlay Construction	1.1	-	1.1	1.1	1.1	-
Total	2.2	-	2.2	2.2	2.2	-
YBI - USCG Road Relocation						
Capital Outlay Support	3.0	(0.3)	2.7	2.7	2.7	-
Capital Outlay Construction	3.0	(0.2)	2.8	2.8	2.8	-
Total	6.0	(0.5)	5.5	5.5	5.5	-
YBI - Substation and Viaduct						
Capital Outlay Support	6.5	(0.1)	6.4	6.4	6.4	-
Capital Outlay Construction	11.6	(0.3)	11.3	11.3	11.3	-
Total	18.1	(0.4)	17.7	17.7	17.7	-
Oakland Geofill						
Capital Outlay Support	2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction	8.2	-	8.2	8.2	8.2	-
Total	10.7	-	10.7	10.7	10.7	-
Pile Installation Demonstration Project						
Capital Outlay Support	1.8	-	1.8	1.8	1.8	-
Capital Outlay Construction	9.3	(0.1)	9.2	9.3	9.3	-
Total	11.1	(0.1)	11.0	11.1	11.1	-

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures

Through September 30, 2018 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (9/2018)	Cost to Date (9/2018)	Cost Forecast (9/2018)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Stormwater Treatment Measures						
Capital Outlay Support	6.0	2.2	8.2	8.2	8.2	-
Capital Outlay Construction	15.0	1.9	16.9	16.9	16.9	-
Total	21.0	4.1	25.1	25.1	25.1	-
Right-of-Way and Environmental Mitigation						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay & Right-of-Way	72.4	-	72.4	62.3	68.0	(4.4)
Total	72.4	-	72.4	62.3	68.0	(4.4)
Sunk Cost - Existing East Span Retrofit						
Capital Outlay Support	39.5	-	39.5	39.5	39.5	-
Capital Outlay Construction	30.8	-	30.8	30.8	30.8	-
Total	70.3	-	70.3	70.3	70.3	-
Other Capital Outlay Support						
Environmental Phase	97.7	0.1	97.8	97.8	97.8	-
Pre-Split Project Expenditures	44.9	-	44.9	44.9	44.9	-
Non-Project Specific Costs	20.0	(16.8)	3.2	3.2	3.2	-
Total	162.6	(16.7)	145.9	145.9	145.9	-
Subtotal Capital Outlay Support	959.3	393.1	1,352.4	1,333.1	1,358.4	6.0
Subtotal Capital Outlay Construction	4,492.2	663.7	5,155.9	5,112.2	5,166.9	11.0
Other Budgeted Capital	35.1	(34.4)	0.7	0.7	0.7	-
Total SFOBB East Span Replacement Project	5,486.6	1,022.4	6,509.0	6,446.0	6,526.0	17.0

⁽¹⁾ Current contract allotment to install two submarine electrical cables is \$5.7 million. Additional non-program funding to support this allocation beyond the \$9.6 million of available programs funds has been made available by the Treasure Island Development Authority.

⁽²⁾ Construction administration of the OTD Detour is under the YBITS#1 contract.

⁽³⁾ Construction administration of the Cantilever segment is under the YBITS#2 contract.

⁽⁴⁾ Approved TBPOC East Span Capital Outlay Support Budget does not include \$5 million approved on June 21, 2018 by TBPOC, that needs to be approved by BATA.

(Due to the rounding of numbers, the totals above are shown within \$0.1).

Glossary of Terms

AB 144/SB 66 BUDGET: The planned allocation of resources for the Toll Bridge Seismic Retrofit Program, or subordinate projects or contracts, as provided in Assembly Bill 144 and Senate Bill 66, signed into law by Governor Schwarzenegger on July 18, 2005, and September 29, 2005, respectively.

AB 144/SB 66/AB1175 PROJECT COMPLETE BASELINE: The planned completion date for the Toll Bridge Seismic Retrofit Program or subordinate projects or contracts.

APPROVED CHANGES: For cost, changes to the AB 144/SB 66 Budget or BATA Budget as approved by the Bay Area Toll Authority Commission. For schedule, changes to the AB 144/SB 66 Project Complete Baseline approved by the Toll Bridge Program Oversight Committee, or changes to the BATA Project Complete Baseline approved by the Bay Area Toll Authority Commission.

AT COMPLETION VARIANCE or VARIANCE (cost): The mathematical difference between the Cost Forecast and the Current Approved Budget.

BATA PROJECT COMPLETE BASELINE: The planned completion date for the Regional Measure 1 Program or subordinate projects or contracts.

CAPITAL OUTLAY SUPPORT (COS): Cost of developing and administering a capital project.

COST FORECAST: The current forecast of all of the costs that are projected to be expended so as to complete the given scope of the program, project, or contract.

COST TO DATE: The actual expenditures incurred by the program, project or contract as of the month and year shown.

CURRENT APPROVED BUDGET: The sum of the AB 144/SB 66 Budget or BATA Budget and Approved Changes.

HINGE PIPE BEAMS: Pipes between roadway sections designed to move within their sleeves during expansion or contraction of the decks during minor events, such as changes in temperature. The beams are designed to absorb the energy of an earthquake by deforming in their middle or "fuse" section. Hinge pipe beams are also found at the western piers where the SAS connects to the YBITS (Hinge "K" pipe beams).

PROJECT COMPLETE CURRENT APPROVED SCHEDULE: The sum of the AB 144/SB 66 Project Complete Baseline or BATA Project Complete Baseline and Approved Changes.

PROJECT COMPLETE SCHEDULE FORECAST: The current projected date for the completion of the program, project, or contract.

SCHEDULE VARIANCE or VARIANCE (schedule): The mathematical difference expressed in months between the Project Complete Schedule Forecast and the Project Complete Current Approved Schedule.

% COMPLETE: % Complete is based on an evaluation of progress on the project, expenditures to date, and schedule.

